Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1. (Currently amended) A system for co-production of hydrogen and electrical energy comprising:

a reformer configured to receive a reformer fuel and steam and produce a reformate rich in hydrogen;

a separation unit in fluid communication with said reformer wherein said separation unit is configured to receive said reformate to separate hydrogen from said reformate and produce an off gas;

a combustor in fluid isolation with respect to said reformer, said combustor configured to receive a fuel for combustion and produce heat energy and a hot compressed gas~~, wherein said combustor is in thermal communication with said reformer~~; and

a gas turbine to expand said hot compressed gas and produce electrical energy and an expanded gas;

wherein at least a part of said heat energy from said combustor is used to produce said reformate in said reformer.

Claim 2. (original) The system according to claim 1, wherein at least a part of said off gas is recycled back to said reformer after separation of hydrogen.

Claim 3. (original) The system according to claim 1, wherein said reformate further comprises carbon monoxide, carbon dioxide and said reformer fuel.

Claim 4. (original) The system according to claim 3, wherein said separation unit further comprises at least one water gas shift reactor to convert carbon monoxide to carbon dioxide to a hydrogen and carbon dioxide rich stream.

Claim 5. (original) The system according to claim 1 further comprising a heat exchanger to generate steam.

Claim 6. (original) The system according to claim 1, wherein said separation unit further comprises a separating device selected from the group consisting of at least one chemical absorber, pressure swing adsorber, cryogenic separator, membrane separator and liquefier.

Claim 7. (original) The system according to claim 4, wherein said separation unit is configured to separate carbon dioxide from said hydrogen and carbon dioxide rich stream.

Claim 8. (cancelled)

Claim 9. (original) The system according to claim 1, wherein said expanded gas produced from said gas turbine comprises substantially low concentration of carbon dioxide.

Claim 10. (original) The system according to claim 1 further comprises a heat recovery steam generator (HRSG) to generate steam and a steam turbine.

Claim 11. (original) The system according to claim 1 wherein said hydrogen from said separation unit is used to operate a fuel cell system comprising one or more fuel cells to generate electrical energy.

Claim 12. (original) The system according to claim 1 further comprising a hydrogen storage unit.

Claim 13. (original) The system according to claim 1, wherein said off gas from said separation unit is recycled into said combustor.

Claim 14. (original) The system according to claim 1, wherein said off gas is burned in a secondary combustor.

Claim 15. (Currently amended) A system for co-production of hydrogen and electrical energy comprising:

a reformer configured to receive a reformer fuel and steam and produce a reformate rich in hydrogen;

a combustor in fluid isolation with respect to said reformer, said combustor configured to receive a fuel for combustion and produce heat energy and a hot compressed gas~~, wherein said combustor is in thermal communication with said reformer~~;

a separation unit in fluid communication with said reformer wherein said separation unit is configured to receive said reformate to separate hydrogen from said reformate and produce an off gas, wherein at least a part of said heat energy from said combustor is used to produce said reformate in said reformer; and

a gas turbine to expand said hot compressed gas and produce electrical energy and an expanded gas;

wherein at least a part of said heat energy from said combustor is used to produce said reformate in said reformer and said separation unit is configured to separate carbon dioxide from said reformate and recycle at least a part of said off gas to said reformer.

Claim 16. (original) The system according to claim 15, wherein said reformate further comprises carbon monoxide, carbon dioxide and said reformer fuel.

Claim 17. (original) The system according to claim 16, wherein said separation unit further comprises at least one water gas shift reactor to convert carbon monoxide to carbon dioxide to a hydrogen and carbon dioxide rich stream.

Claim 18. (original) The system according to claim 16, wherein said separation unit further comprises a separating device selected from the group consisting of at least one chemical absorber, pressure swing adsorber, cryogenic separator, membrane separator and liquefier.

Claim 19. (original) The system according to claim 17, wherein said separation unit is configured to separate carbon dioxide from said hydrogen and carbon dioxide rich stream.

Claim 20. (Currently amended) A method for co-production of hydrogen and electrical energy comprising the steps of:

reforming a mixture of a reformer fuel and steam in a reformer and producing a reformate rich in hydrogen;

separating hydrogen from said reformate and producing an off gas;

combusting a fuel in a combustor and producing heat energy and a hot compressed gas, wherein said combustor is <u>in fluid isolation with respect to said reformer</u> ~~in thermal communication with said reformer~~; and

expanding said hot compressed gas in a gas turbine expanding and producing electrical energy and an expanded gas;

wherein at least a part of said heat energy from said combustor is used to produce said reformate in said reformer.

Claim 21. (original) The method according to claim 20 further comprising recycling at least a part of said off gas back to said reformer after separation of hydrogen.

Claim 22. (Currently amended) A combustor reformer system comprising:

a combustor configured to receive a fuel and an oxidant for combustion and production of a hot compressed gas and heat energy, and

a reformer in fluid isolation with respect to ~~intimate contact with~~ said combustor, said reformer configured to receive a reformer fuel and steam and produce a reformate rich in hydrogen ;

wherein said reformer is in fluid isolation with respect to ~~in thermal communication with~~ said combustor and at least a part of said heat energy from said combustor is used to produce said reformate in said reformer.